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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/858,130	05/15/2001	Stephen J. Fantone	0215/US	1748

30333 7590 06/07/2004

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LEXINGTON, MA 02421-7025

EXAMINER

DIEP, NHON THANH

ART UNIT	PAPER NUMBER
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2613

3

DATE MAILED: 06/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/858,130

Applicant(s)

FANTONE ET AL.

Examiner

Nhon T Diep

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— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 5/15/2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2; 7/30/2001.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1- 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zernov et al (US 6,097,424), in view of Caimi et al (US 4,777,501).

Zernov et al discloses a submersible video viewing system comprising the same subsurface video observation system comprising: a solid state imager wherein the solid state imager has substantially sensitivity to infrared radiation (fig. 4, col. 6, ln. 49-60); video signal generating means for generating a video signal corresponding to the image formed on the solid state imager (col. 4, ln. 19-22); mounting means for mounting the solid state imager on a watercraft so that the imager forms an image of an underwater area adjacent the watercraft (fig. 1); and a video display device arranged to receive the video signal and to display a visible image corresponding to the image formed on the solid state imager (col. 1, ln. 15-17 and col. 4, ln. 16-18) as specified in claims 1 and 15; the solid state is sensitive to infrared radiation in the range of about 700 to about 1400 nm (fig. 4, col. 6, ln. 49-60) as specified in claim 3; is sensitive to visible light in the range of about 400 to 700 nm (Intra blue = visible light) as specified in claim 4; the mounting means are arranged to mount the solid state on the hull of the watercraft (fig. 1) as specified in claims 6 and 18; the mounting means are arranged to mount the solid

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state imager on an outboard motor attachable to the watercraft (fig. 10) as specified in claims 9 and 19; a source of infrared radiation mounted on the outboard motor so as to direct infrared radiation to an area imaged by the solid state imager (inherently included) as specified in claims 12 and 20; the video display device comprises a liquid crystal display (col. 1, ln. 15-17) as specified in claim 13; a source infrared radiation arranged to direct infrared radiation on to an area imaged by the solid imager (fig. 4, col. 6, ln. 49-60) as specified in claim 14. It is noted that Zernov et al does not particularly disclose that:

- a. a solid state imager having an operating mode as specified in claims 1 and 15;
- b. the solid state imager is a charge coupled device as specified in claims 2 and 16;
- c. has a first operating mode wherein it is sensitive to both visible and infrared radiation and a second operating mode in which it is sensitive to visible radiation only as specified in claims 5 and 17;
- d. a plurality of the solid state imagers are provided to enable viewing through the entire angle of 360 degrees horizontal surrounding the watercraft as specified in claim 7;
- e. rotating means for rotating the solid state imager relative to the hull of the watercraft, the system further comprising indicator means for providing a visual indication of the direction in which the solid state imager is pointing as specified in claim 8;

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f. the video display device is also mounted on the outboard motor as specified in claim 10; and

g. the motor is a trolling motor capable of being manually rotated relative to the hull of the watercraft as specified in claim 11;

With regard to a-c: Caimi et al teaches a switching device used to switch between two sources of different wavelength emitters (col. 3, ln. 54-58) and therefore, it would have been obvious to one of ordinary skilled in the art at the time the invention was made to modify the system of Zernov et al by using the switching device as taught by Caimi et al to operate the camera system with different emitting radiation wavelengths namely intra blue and infrared radiations. Doing so would help to save power. Further more, it would have been obvious that the cameras as disclosed by Zernov et al would have been very small sized CCD cameras since small sized CCD cameras would be easy to install.

With regard to d-e: It is noted that, Zernov et al does further disclose that another object of the invention is to provide a video system that can accommodate multiple cameras to provide forward and reverse viewing and/or an expanded field of view.

Therefore it would have been obvious to one of ordinary skilled in the art at the time the invention was made to provide a plurality of the solid state imagers or a motor for rotating the solid state imager relative to the hull of the watercraft, and associated indicator for providing a visual indication of the direction in which the solid state imager is pointing as an alternative to multiple cameras system so as to obtain images all

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around the cameras including images viewing through the entire angle of 360 degrees horizontal surrounding the watercraft.

With regard to f: The location of displaying device could be mounted anywhere as wished by the designer and therefore, it would have been obvious as a matter of designer's choice to mount the video display device on the outboard motor.

With regard to g: It would also obvious to replace a motor of Zernov et al (fig, 16) with a trolling motor to easily control to device manually.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. King (US 4,764,334 discloses a visual inspection system for radioactive assemblies using fiberoptics.

b. Keeler (US 5,034,810) discloses a two wavelengths in-situ imaging of solitary internal waves.

c. Ang et al (US 6,669,970) discloses a method of feeding fish.

d. Tusting (US 4,876,565) discloses an apparatus and method of underwater optical recording.

e. Caimi et al (US 4,914,460) discloses an apparatus and methods of determining distance and orientation.

f. Sylvester et al (US 4,102,203) discloses an underwater inspection and communication apparatus.

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g. Ejima et al (US 5,438,363) discloses a camera capable of adjusting white balance during underwater photography.

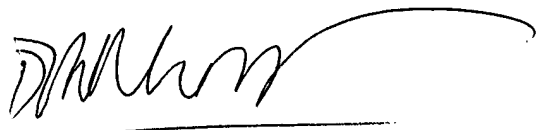
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhon T Diep whose telephone number is 703-305-4648.

The examiner can normally be reached on m-f.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris S Kelley can be reached on 703 305-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ND
31 May 2004


**NHON DIEP
PRIMARY EXAMINER**